Required Sheet Metal Examples

Document Overview:

1) Describe the requirements of the sheet metal construction for a typical Peak+ project.
2) Describe special cases to be aware of, which require more in-depth sheet metal fabrication.
3) Overview common methods of mounting frames on a unit.

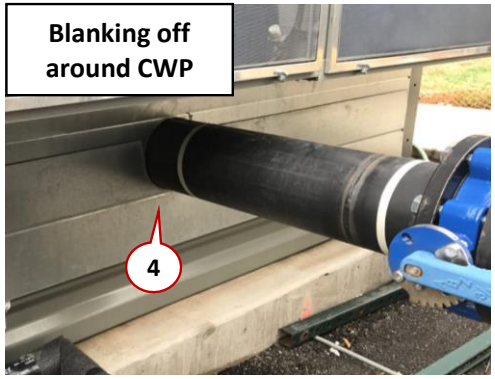
General Requirements

Typical Sheet Metal Requirements:

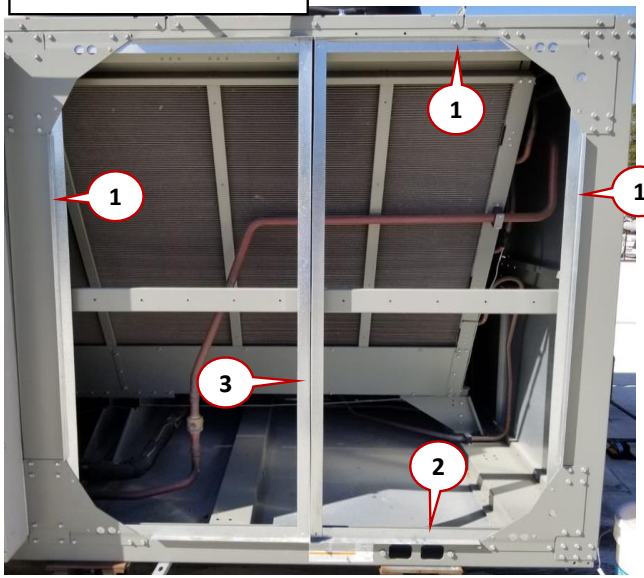
All hail guards to be removed. Seal off any gaps around unit that allow bypass air.

1) Frames require a 1.5" lip around the perimeter for proper mounting. If lip is less than 1.5" then a sheet metal flat or angle is needed.
2) 3" T-Section or 1.5" Angle is needed along bottom of frames for support. See "Bottom Mounting Methods" for further detail.
3) 3" T-Section typically needed where frames meet.
4) Blank off behind any obstacles (Disconnects, CWP's, control boxes, conduit) where frames cannot be placed.
5) If open to air, entire bottom of unit to be sealed off to prevent bypass air.
6) Any other openings along top or bottom of unit must be sealed off to prevent air from bypassing the frames.

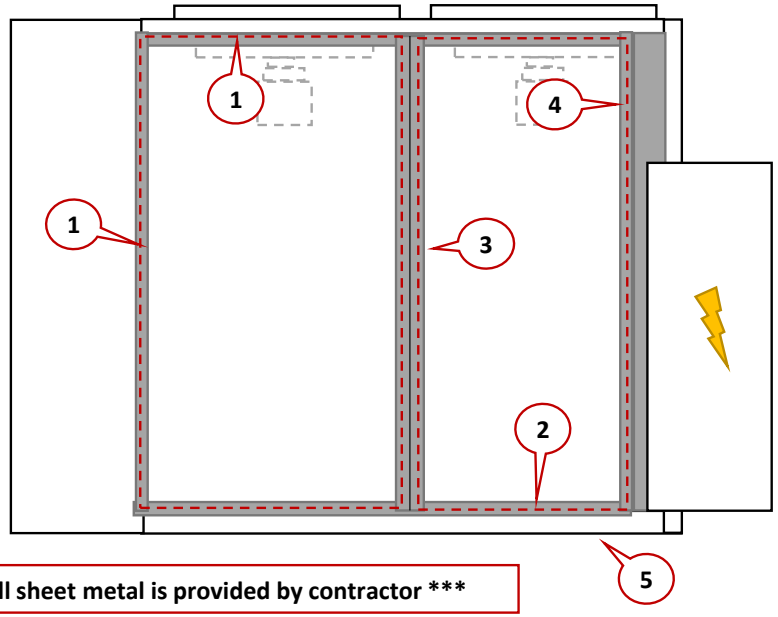
Blanking off around CWP



Typical Sheet Metal for Frames

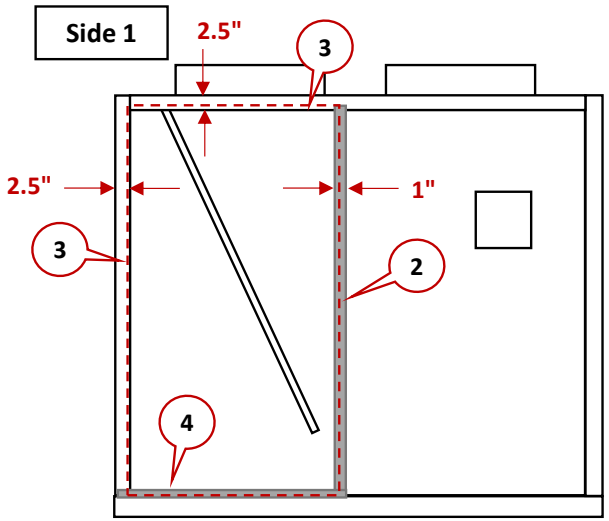


Side View



***** All sheet metal is provided by contractor *****

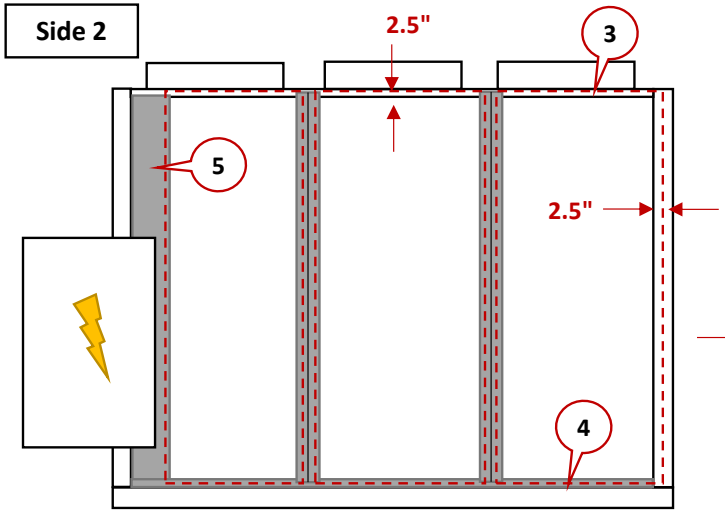
Example Unit #1
Trane Intellipak

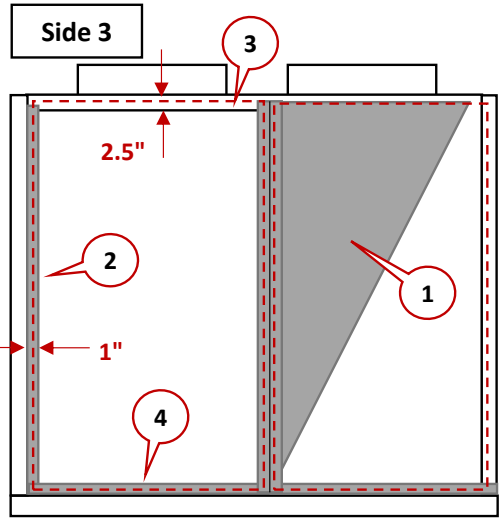


Sheet Metal Notes.

1) If V-Coil is open after hail guard is removed, SM Triangle needed to prevent bypass air (Typical of old style Intellipaks).
2) Since lip is less than 1.5", some sides require 1.5" flat.
3) Since lip is greater than 1.5", top and some sides do not require sheet metal.
4) 1.5" Angle or 3" T-Section needed along bottom of frames. See "Bottom Mounting Methods" for futher information.
5) Seal off behind disconnect if obstructing frames.
6) If open, pan off bottom of unit with SM, or seal with rubber skirt.

Some Intellipaks use the hail guard to block air, this must be replaced with a SM triangle since all hailguards are removed.





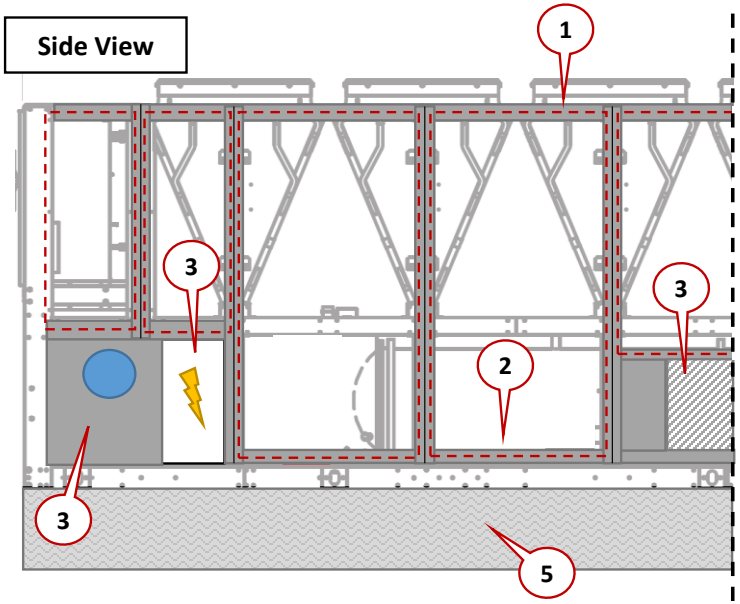
Newer Intellipaks typically will not require the SM Triangle because the V-Coil is already sealed off.

Example Unit #2
Std V-Coil Chiller

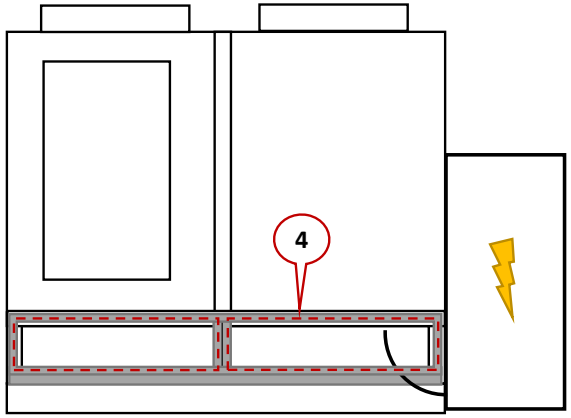
Sheet Metal Notes.

1) See "Top Mounting Methods" for further detail.
2) See "Bottom Mounting Methods" for futher detail.
3) Seal off around CWP's, control boxes, or compressor enclosures with SM as needed, with 1.5" Angle along top for bottom of frame.
4) Due to low clearance caused by control cabinet and conduit on right side, a SM transition will be required to space frames forward to make them flush with control cabinet. seal around conduit with SM, caulk as necessary.
5) If open, pan off bottom of unit with SM, or seal with rubber skirt.

Side View



Front View

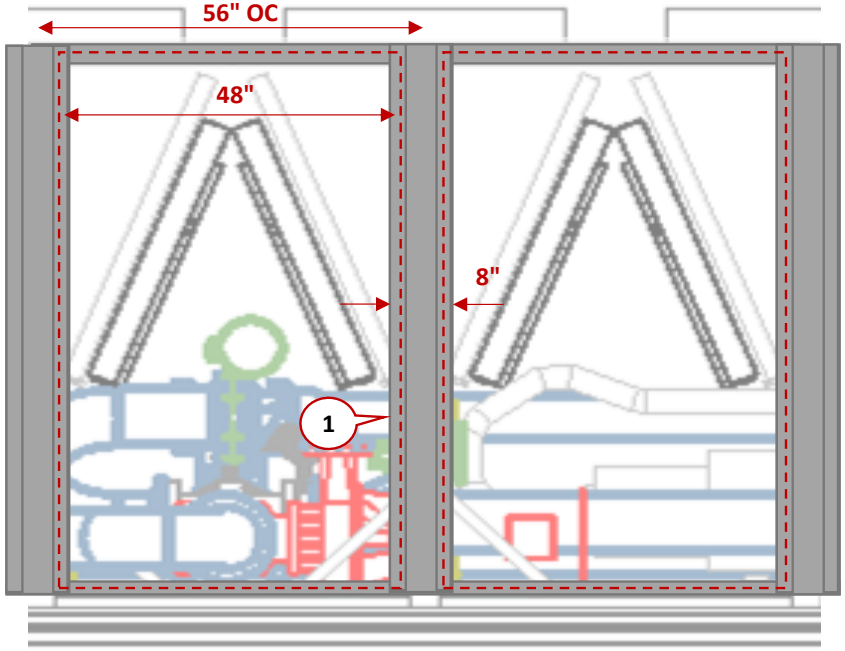


Example Units #3
Trane ACRB450

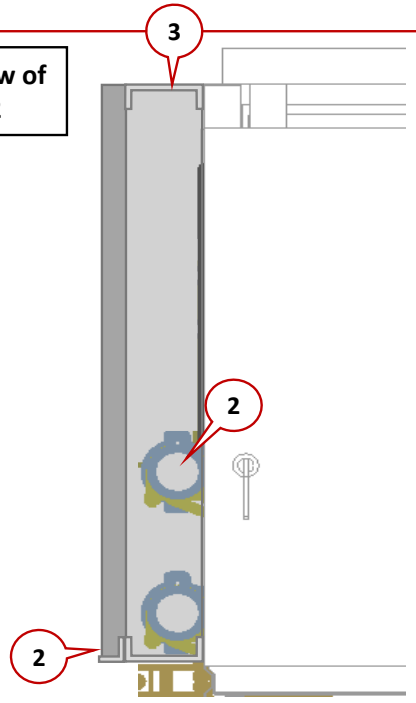
Sheet Metal Notes.

1) The maximum width for single frame is 48". If the width between V-Coils is greater than 48", then a SM spacer will be needed between frames. In this case, an 8" Flat or C-Channel with (2) 1.5" Angles is needed.
2) If pipe or other large obstructions (in the below case Water Side Econmizer Piping) are running along the length of the unit then frames may need to be spaced past the obstruction with C-Channel around the perimeter of the frames.
3) Any other T-Sections or Angles to be fixed to this C-Channel.

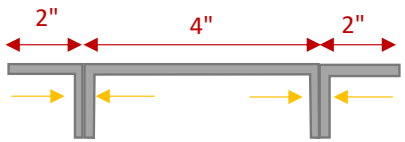
Side 1



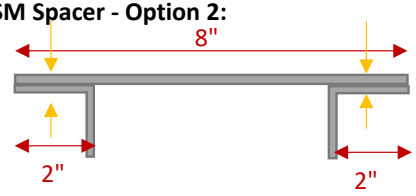
Front View of Side 2



SM Spacer - Option 1:



SM Spacer - Option 2:

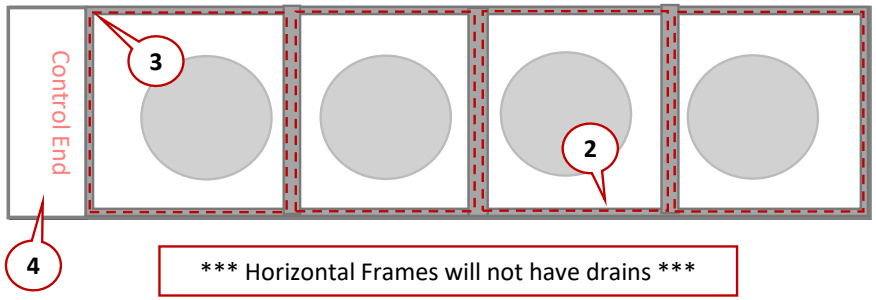


Example Units #4 & 5 Condensers

Condensers will require either Horizontal or Vertical Frames depending on clearance and airflow.

Example #4

Bottom View



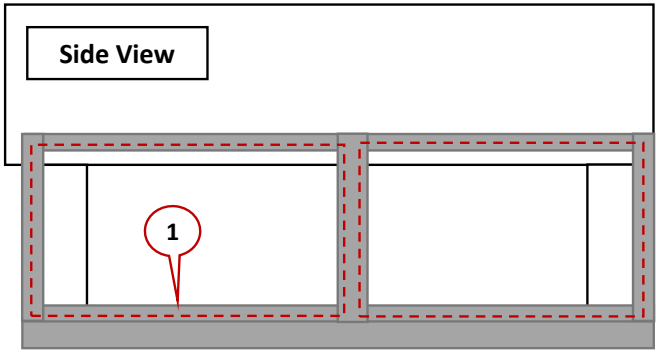
*** Horizontal Frames will not have drains ***

Option 1: Horizontal Frames

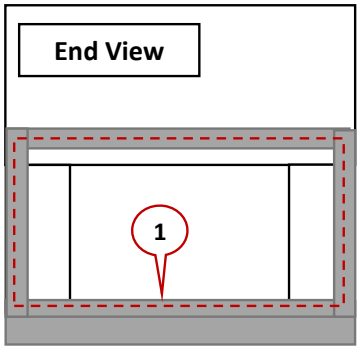
1) Frames mounted under unit.
2) Depending on the distance from the coil to the frames, the frames may need to be spaced down with C-Channel around the perimeter of the frames.
3) May need to notch or seal around legs if they are blocking the frames or SM.
4) Seal off behind any conduit; primarily, on the control end.

Example #5

Side View



End View



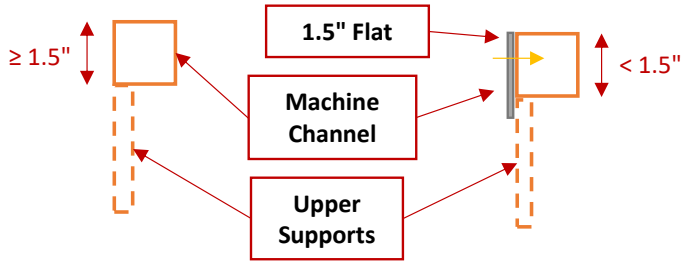
Option 2: Vertical Frames

1) Frames mounted on side of unit. SM Flat or Angle needed along bottom to allow for drain clearance.

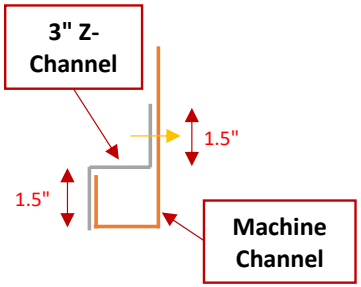
Top Mounting Methods Detail

Scenario 1
Top lip is greater than 1.5" so no additional SM is needed (provided no bolts or other obstructions)

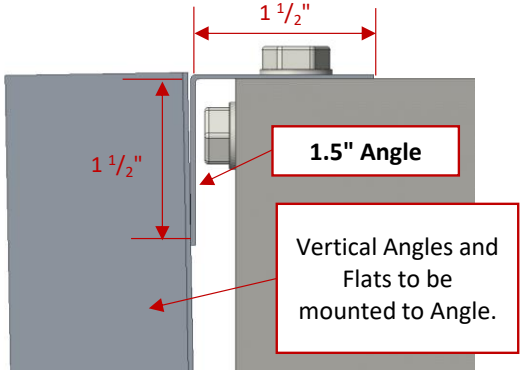
Scenario 2
Top lip is less than 1.5" so 1.5" SM Flat is needed along length of unit.



Scenario 3
Depending on shape of top lip, a 1.5" Z-Channel may be needed along length of unit to provide magnetic contact surface for top of frames.

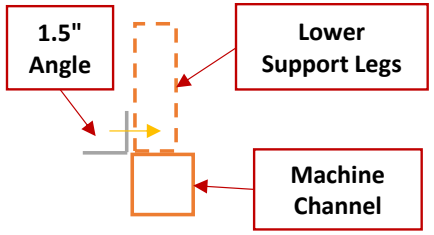


Scenario 4
Top lip has bolt heads which interfere with the mounting of the frames so 1.5" Angle is needed along length of unit.

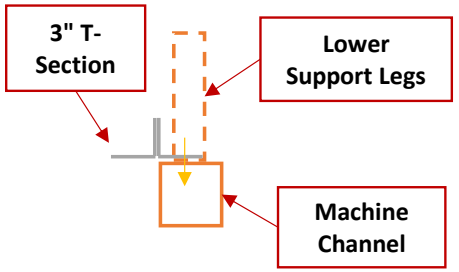


Bottom Mounting Methods Detail

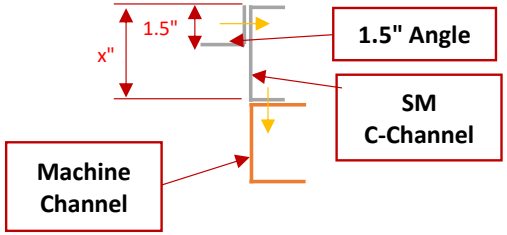
Scenario 1
1.5" Angle along bottom of frames the length of unit. Secure to the legs and machine flanges.



Scenario 2
3" T-Section along bottom of frames the length of chiller. Secure to top of unit and notch around legs.



Scenario 3
Unit has lifting eyes along bottom of chassis, so C-Channel is needed to space frames up above bottom of unit and 1.5" Angle to mount frames.



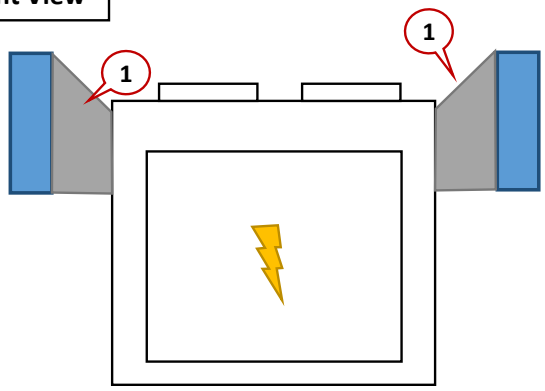
Transition Example

Sheet Metal Transitions:

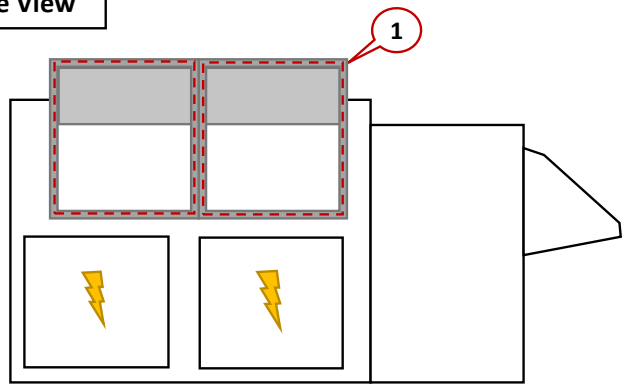
1) Depending on the velocity of the air across the condenser coils, a transition may be needed to space the frames away from the unit to decrease the velocity.

Example #1

Front View

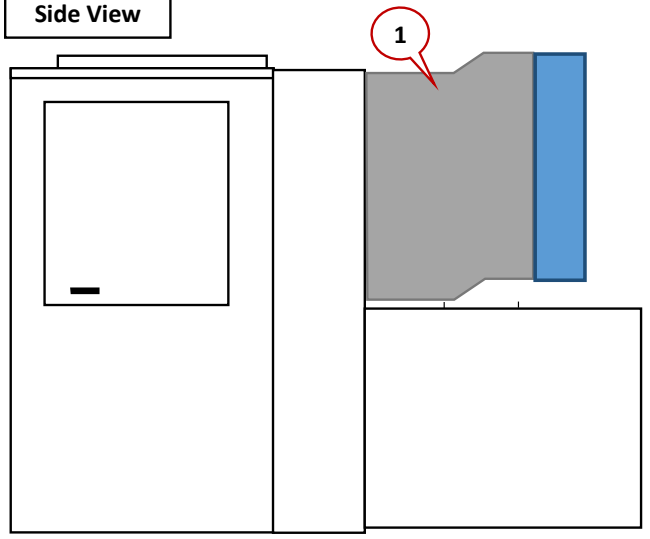


Side View

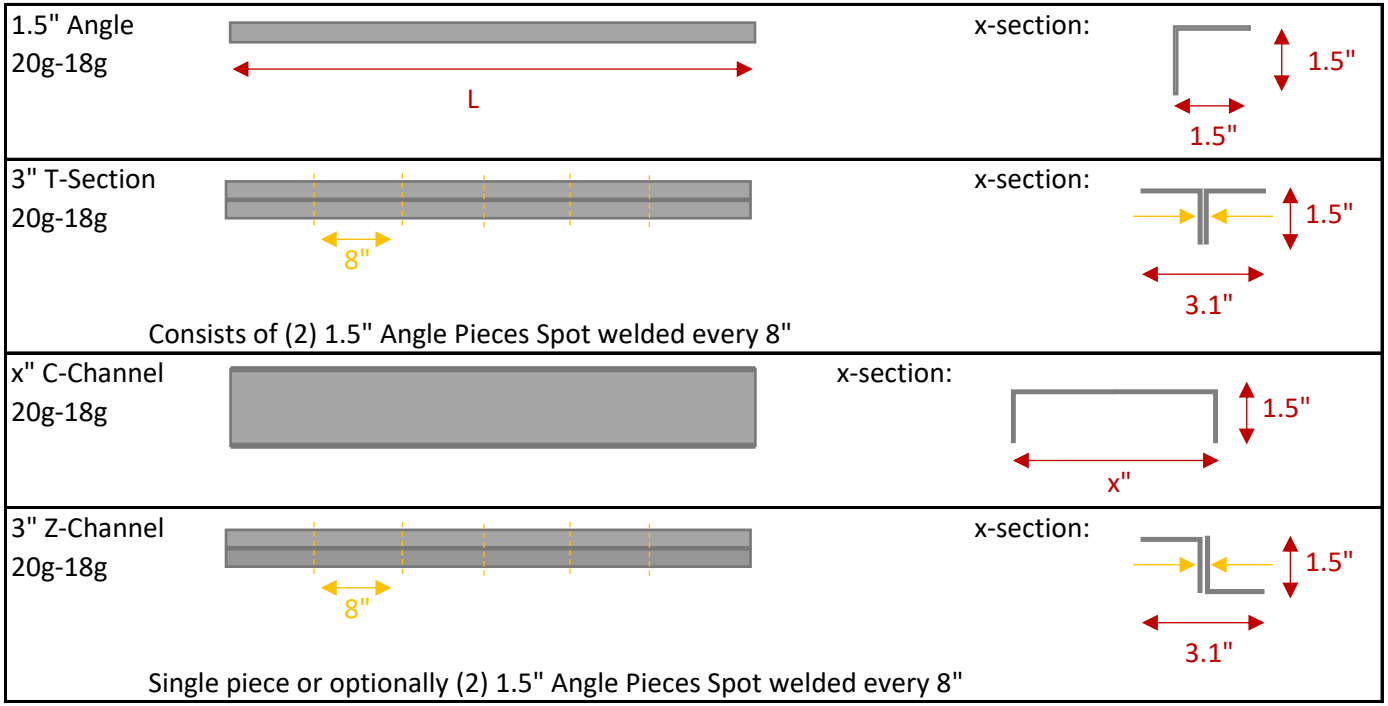


Example #2

Side View



Typical Sheet Metal Details



Notes:

1) All sheet metal for frame attachment shall be min. 20 gauge galvanized steel.

2) Any additional area that allows air to by-pass frames and enter the coils shall be blocked off accordingly.

3) Additional pieces may be needed, see project specific Field Supplied Sheet Metal Layout for more detail.

Recommended Sheet Metal Screw Spec:

#10 x 1" Self-Drilling Screws / Phillips / Modified Truss Head / 18-8 Stainless Steel

Note for areas where magnets will not need to attach, standard hex head screws are recommended, especially where drilling into thicker machine beams.